

Prior Total Knee Arthroplasty Is Associated with an Increased Risk of Dislocation Following Total Hip Arthroplasty

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INTRODUCTION: Total knee arthroplasty (TKA) has been shown to alter lower extremity biomechanics, which may impact outcomes following total hip arthroplasty (THA). However, the impact of prior TKA on postoperative complications after THA has not been fully evaluated. Thus, the purpose of this study was to evaluate the impact of TKA performed either before or after THA on the risk of dislocation and other complications following primary THA.

METHODS: The PearlDiver database was queried to evaluate outcomes following THA in patients with and without TKA before or after THA. Only ICD-10 diagnosis codes were utilized to ensure correct laterality. Patients who underwent TKA any time prior to THA (n=6,994) were propensity score matched 1:4 to those that underwent THA (n=334,636) using demographics, Charlson Comorbidity Index (CCI), comorbidities and known risk factors for instability including neuromuscular disorders, connective tissue disorders, prior spinal fusion, scoliosis, lumbar stenosis, and additional psychiatric diagnoses. A separate matched cohort was created for patients who underwent TKA after THA (n=3975) using the same matching criteria. Surgical complications were compared between groups. Sub-analyses were performed for those with an ipsilateral TKA and contralateral TKA.

RESULTS: Patients with prior TKA had a significantly increased risk of 90-day dislocation following THA (1.4% vs. 0.8%; OR 1.73, p<0.001). Additionally, prior TKA was also associated with higher rates of revision (2.5% vs. 1.7%; OR 1.43, p<0.001), periprosthetic joint infection (PJI) (1.7% vs. 1.1%; OR 1.67, p<0.001), and aseptic loosening (0.7% vs. 0.5%; OR 1.50, p=0.037) within 2 years. When stratified by laterality, both ipsilateral (OR 1.82, p<0.001) and contralateral TKA (OR 1.65, p=0.001) were associated with significantly increased 90-day dislocation risk compared to controls. In contrast, patients who underwent TKA after THA demonstrated no significant differences in surgical complication rates compared to matched controls.

DISCUSSION AND CONCLUSION: TKA performed prior to THA was associated with a significantly increased risk of early dislocation, PJI, and revision following THA, with the greatest risk observed in patients with an ipsilateral TKA. In contrast, patients undergoing TKA after THA did not demonstrate an increased risk of surgical complications. These results highlight the importance of surgical sequencing and preoperative planning in patients requiring both hip and knee arthroplasty.

Complication	Control (n=37884)	Prior TKA (n=6994)	Odds Ratio (95% CI)	P-value
90-Day Dislocation	222 (0.58%)	97 (1.4%)	1.73 (1.36-2.20)	<0.001
1-Year Dislocation	307 (1.1%)	120 (1.7%)	1.57 (1.27-1.94)	<0.001
2-Year Dislocation	356 (1.3%)	136 (1.9%)	1.54 (1.26-1.87)	<0.001
Wound Dehiscence	222 (0.58%)	66 (0.9%)	1.19 (0.90-1.57)	0.22
Revision	487 (1.7%)	173 (2.5%)	1.43 (1.20-1.70)	<0.001
PJI	294 (1.1%)	122 (1.7%)	1.67 (1.35-2.06)	<0.001
Periprosthetic Fracture	20 (0.05%)	83 (1.2%)	1.27 (0.99-1.63)	0.065
Aseptic Loosening	130 (0.3%)	47 (0.7%)	1.45 (1.04-2.02)	0.037

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